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PROPOSAL TO STUDY THE PROCESS OF REDEVELOPMENT IN SEVERAL GROUPS OF DEPRIVED EARLY ADOLESCENTS IN BOTH RESIDENTIAL AND NON-RESIDENTIAL SETTINGS.

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THE REDEVELOPMENT AND ENRICHMENT PROCEDURES USED TO INDUCE CHANGES IN THE LEARNING PROCESS OF ADOLESCENTS (AGES 12-15) WILL BE EVALUATED. THE EXTENT OF MODIFICATION AND THE BEST ENVIRONMENT FOR CHANGE ARE SECONDARY INTERESTS. INSTRUMENTAL ENRICHMENT, A CONSCIOUS RELEARNING OF LEARNING SETS, IS THE PROPOSED TECHNIQUE FOR ACHIEVING COGNITIVE REDEVELOPMENT. SOME DEGREE OF INDUCED REGRESSION WILL ACCOMPANY THIS METHOD TO ALLOW GRADUAL, NONTHREATENING LEARNING. TWO GROUPS WILL BE FORMED, EACH GROUP CONSISTING OF SUBGROUPS DIVIDED BY THE VARIABLES, "DEEPLY DEPRIVED" AND "SIGNIFICANTLY DEPRIVED." GROUP "A" WILL HAVE 150 STUDENTS LIVING IN A YOUTH VILLIAGE. GROUP "B" WILL HAVE 120 STUDENTS ATTENDING A DAY CENTER. IT IS HYPOTHESIZED THAT THE RESIDENTIAL SETTING WILL BE MORE EFFECTIVE IN RECONSTRUCTING THE IMPORTANT LIFE STAGES DURING WHICH THE COGNITIVE PROCESSES DISTORTED BY CULTURAL DEPRIVATION CAN BE RELEARNED. BOTH GROUPS WILL BE DIVIDED EQUALLY BY SEX AND PROPORTIONALLY BY THE AMOUNT OF INSTRUCTIONAL ENRICHMENT RECEIVED (ALL OR NONE). EACH GROUP WILL PARTICIPATE IN THE PROJECT FOR 2 YEARS AND WILL BE EVALUATED 2 YEARS AFTER THE PROGRAM'S COMPLETION. (NC)

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Presented to Israel Foundations Trustees

Tel-Aviv, Israel

By Reuven Feuerstein, Youth Aliya, in collaboration with

Martin Hamburger, New York University

For the Research Unit of the Hadassah-WIZO Canada Child Guidance Clinic

THE YOUTH ALIYA DEPARTMENT OF THE JEWISH AGENCY

Jerusalem, November 1965

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PREFACE

Although the ideas, instruments, and purpose found in this proposal have been developing over a considerable period of time, the actual document was prepared in just a few weeks. As such, a full plan of operations is not given, nor are the details of schedule and instruments. Furthermore, full references and acknowledgements have not been provided nor has the documentation which is evidently desirable . It is with these limitations in mind that the proposal should be read and with the knowledge that a fuller document will be developed during the planning and preparation phase of the project.

It is not possible to present this proposal, however, without certain basic acknowledgement, first to the encouragement and support of the Youth Aliya Department of the Jewish Agency, and particularly, to Mr. Moshe Kol, Head; Mr. David Umansky, Director-General; and Mr. Yohanan Ginott, Education Director. It is also a pleasure to acknowledge the great help rendered by Mr. Shimon Tuchman, Treasurer-General of Youth Aliya in the planning of this project. Appreciation is due for support and consultation to Dr. David Krasilowsky, Co-director of the Research Unit, under whose auspices this proposal was developed.

Deep gratitude is hereby expressed to the Hadassah-WIZO of Canada, whose generosity and understanding helped to establish the Research Unit of the Hadassah-WIZO Canada Child Guidance Clinic. It is also in order to acknowledge the long and deep concern and interest in such a project of Dr. Chanoch Rinnott, Director-General of the Ministry of Education and formerly Education Director of Youth Aliya.

As for the theoretical structure, special and very deep acknowledgement is made to the late Professor André Rey of the University of Geneva, whose inspiration and active collaboration were responsible for many of the ideas and instruments described, and whose influence has permeated this proposal. Also, a great debt is owed to Dr. Marc Richelle of the University of Liège, who worked with the principal investigator in the North African Study and whose collaboration is still felt in the present project.

While many others should be cited as helpful and inspiring, final acknowledgements are made to several American colleagues: Dr. Martin Deutsch, Director of the Institute of Developmental Studies and Dr. Alfred Freedman, Chairman of the Department of Psychiatry, both of New York Medical College; and to Dr. Milton Schwebel, Associate Dean, New York University School of Education.

It is hoped that readers of this proposal will recognize that the intent is to disseminate ideas and methods which are or should be in the public domain. It is further hoped that whatever is most useful here will be correlated with similar research in Israel and in other countries. In this connection, a word is in order about two

proposed international conferences to be held in Israel. The plan for these conferences, not developed further in the proposal itself, is to bring together a small group (about 25) of researchers and scholars from Europe, America and Israel in the first conference in 1966 to help with the actual plan of operations and instruments as well as to determine feasibility of related or replicate studies in other places. The data and experience gathered after the proposed experiment should then be evaluated (after a period of time to be determined in the first conference) by the same group with a view towards the maximum and quickest dissemination of findings to all those who are now focusing on this domain of research activity throughout the world.

Reuven Feuerstein
Martin Hamburger

GENERAL STATEMENT

A PROPOSAL TO STUDY THE PROCESS OF REDEVELOPMENT IN SEVERAL GROUPS OF DEPRIVED EARLY ADOLESCENTS IN BOTH RESIDENTIAL AND NON-RESIDENTIAL SETTINGS.

I. THE PROBLEM AND THE PROPOSAL

The proposed study is concerned with the systematic utilization of a variety of redevelopment and enrichment procedures aimed at significant changes in the learning process and thus at improving social integration, self-acceptance and level of functioning of deprived, low-functioning adolescent youth at a point in their lives when such modification or reversal is usually considered either unlikely or greatly limited.

Although the human problems of deprived and low-functioning adolescents (and adults) are looming larger and larger, only cursory attempts at reversal, often based on low expectations of success, have been made at this level as compared with the great variety of compensatory efforts directed at younger children. The present proposal focuses on selected and strategic methods of dealing with the problem of deprived adolescents, recognizing that a much broader range of psychological, social and educational problems and experiences is involved. Nevertheless, the choice of a specific age group, with a low functional level, the use of a residential setting with an elaborate program of induced "regression", with selected enrichment procedures, notably " instrumental enrichment" -- all these are deemed to be crucial ways of effecting the hypothesized degree of reversal, especially cognitive redevelopment .

The Sub-Problems

In order to study the stated problem with greater precision, it is necessary to indicate the several sub-problems to be considered within the overall research design.

Sub-problem 1: Are adolescents who are so deprived as to warrant prediction that their school adaptation and progress will be seriously hampered still modifiable at ages 12 to 15? Are "reversibility" and "redevelopment" meaningful concepts at this relatively late stage in human development?

Sub-problem 2: If indeed redevelopment is possible and reversibility can take place, then the next question is: What is the extent of such modifiability? How well can it be charted and predicted on the basis of both diagnostic indicators and prescribed procedures of intervention.

Sub-problem 3: What are the optimal conditions for attaining redevelopment? What are the best environments, namely, youth village, residence, kibbutz, day-center, integrated community, etc., in achieving the desired setting for reversibility pro - cedures?

Sub-problem 4: What is the optimal procedure for redevelopment? Here the problem centers on the appropriate pedagogical strategies and techniques such as instrumental enrichment, or curricular enrichment, and on extra-curricular activities, social or therapeutic climate, etc.

II. DEFINITION OF TERMS AND CONCEPTS

Because of the ambiguities and the vagueness of terminology in this whole domain of activity and research, it is especially important to state both the conceptual and operational definitions to be employed in the proposed project.

1. CULTURAL AND SOCIAL DEPRIVATION: By this term we will refer to the population of children and youth variously described as disadvantaged, socially backward, culturally different, and sometimes as minority group. However, the definition for our purposes will be broadly the following: The incapacity of the individual child, belonging to such a population to use effectively the normal educational framework designed for development and integration of the individual in his society.*

2. ADOLESCENT : Defined here to include the age range of 12.0 to 17.0 years for girls and 13.0 to 17.0 for boys. The experimental period for early adolescents will range from 12.0 to 15.0 years (12 to 15 for girls; 13 to 15 for boys).

3. IMPAIRED FUNCTIONS: While deprivation itself may not necessarily result in impaired functions even when the level of functioning itself may be poor, impaired cognitive functions may be described as those which are basic to further learning. Thus, blurred perceptual activity, and poor attentional, observational and exploratory behavior patterns are examples of impaired functions in contrast to the absence of contentual and informational experience .

4a. "DEEPLY DEPRIVED" ADOLESCENTS: Characterized by several criteria but most relevant is the low level of school functioning, which may most accurately be described as actual illiteracy and which is manifested both in the lack of lexic functions and in the inability to perform arithmetic operations, as well as by a very poor level of functioning on psychometric examinations.

4b. The second group of deprived, "SIGNIFICANTLY DEPRIVED", may be characterized as functionally illiterate, insofar as the performance on the several criteria are poor, but where there is at least minimal development in the lexic and arithmetic skills. However, such "mastery" is clearly not adequate for continued learning or profiting from the school setting.

5. GENERAL ENRICHMENT: broadly defined as a wide range of pre-curricular, co-curricular, extra-curricular and, finally, curricular activities, designed to close

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*The justification for adopting this definition will be presented in Section IV - The Rationale for the Study.

an educational, developmental and cultural gap.

6. INSTRUMENTAL ENRICHMENT : Is specifically defined as a series of steps aiming to develop attitudinal and motivational sets and the perceptual and cognitive functions which may be considered as pre-requisites for the individual's ability to make use of the curriculum.

Instrumental enrichment is distinguished from general enrichment insofar as it makes a direct attack upon specific, diagnostically-determined impaired functions through the use of specifically designed exercises. The emphasis in these exercises is on learning to learn.

7. CURRICULUM: Operationally defined as the program of formal and planned educational experiences, with an emphasis on the contentual aspects of learning.

8. INDUCED AND CONTROLLED "REGRESSION": Defined as an approach to deprived and low-functioning adolescents, in a residential setting, which assumes that in order to modify and develop their school functioning, it is first necessary to replace a pragmatic task orientation with a more infantile, play-oriented, intrinsically pleasure-seeking set of activities. The term "regression" is widely used and is considered phase-specific behavior for adolescents, and especially in the emotional realm is a "natural" development. However, induced and controlled cognitive and social "regression", is a necessary and planned (rather than spontaneous) activity, vital to unify the several disparate sectors of the deprived adolescent's life, already a disharmonious array of activities ranging from quasi-adult to quasi-infantile. (See Peter Blos, On Adolescence)

9. PLANNED REDEVELOPMENT: Defined as the theory and practice of intervening into an already existent developmental pattern, which, unless it is counter - acted, will predictably result in the emergence of a deprived adult. Such "reversibility" is variously assumed to be appropriate at different age levels, critical or optimal, but the general agreement is that by the time of adolescence, reversibility and modifiability are highly unlikely.

Although reversibility has frequently been observed as a spontaneous precess, where life conditions induce fundamental reorientations and therefore mobilize latent or potential or dormant abilities and enable their development, the focus on planned modification and reversibility is herein differently conceived, insofar as it consists of a series of planned processes and mobilizations, which increase the probability of redevelopment, especially by attacking the impaired functions directly.

10. YOUTH VILLAGE: A residential setting usually in a rural environment, designed as a living arrangement to develop and educate children and adolescents, ranging from 7 to 17 years and usually consisting of from 120 to 500 youth. Youth Aliya places many of its children in these villages.

11. RESIDENTIAL SETTING: Operationally defined in this study as Kiryat-Yearim, a youth village initially built for deeply disturbed children, sponsored by the Swiss

Friends of the Youth Village and Youth-Aliya.

This residence belongs to and is under direct management of Youth-Aliya, and has recently been reorganized to accommodate a population of culturally deprived adolescents.

12. DAY CENTER: An institution (to be selected), one of 18 institutions spread throughout Israel, usually located near a developmental village or urban slum area. It involves a school setting devised for adolescents who do not leave their homes for a residential setting, for one reason or another, but for whom separate schooling is necessary or desirable. The preponderance of pupils consists of school drop-outs (noshrim) for whom general curriculum, pre - vocational training and social activities are provided in a prolonged-day program.

13. YOUTH LEADER (madrich): A youthcounselor, not necessarily a teacher, but trained and experienced in group work, aged between 22 and 30, whose function and responsibility is for the extra-curricular and life-space activities of the children in the Youth Village.

14. HOUSE MOTHER (metapelet): A woman from age 20 to 45, mainly concerned with the physical well-being of the child; together with the youth leader, forms the basic team for the daily non-academic life of the child, plays important role in the emotional and social adaptation of children in the Youth Village.

15. All other professional personnel, such as teachers, psychological consultants, and social workers assume roles as usually defined, with special adaptations and functions as required.

III. THE NEED FOR THE STUDY

The proposed research involves theory development, program demonstration, controlled experimentation and project evaluation, the several vital areas of concern with disadvantaged and deprived adolescent youth which still remain loosely conceptualized, variously defined, largely uncharted and just as significantly, devoid of materials. The growing literature, the increasing expenditures of funds and the number of programs and projects which have all emerged as a response to the world-wide problem of undeveloped children and youth make the type of research proposed here all the more significant. The specific reasons for such a research follow:

1. The clarification of the concept of "cultural deprivation" and the establishment of an operational definition of this term should help materially to overcome a lack, noted by many writers (Hunt, Deutsch, Riessman, Passow, etc), who explicitly or implicitly, deplore the global, undifferentiated nature of the term, or its many synonyms or equi - valents.

Insofar as the present proposal seeks to develop an inventory of the impaired functions (those which the deprived may be said to lack in their efforts to cope with school

demands), it is hoped that such an inventory will fulfill a further and even greater need, namely, the clarification of what are the impairing factors. By thus clarifying symptoms and inferring causes, it is hoped that the process of impairment, as an historical circumstance and as a concomitant of deprivation, may be better understood.

Although each culture and each period establishes its own definitions of deprivation, the discrepancies may be reconciled by considering a unifying concept, namely, what is adequate preparation for participating in the work-force of a developing or developed country. Understanding better the requirements and processes of adaptation to the Israeli culture should illuminate the dimensions of adaptation in other cultures as well.

2. The second major need reflected in this proposal is to make a concerted attack on the problem of redevelopment or reversibility. This is needed to test the various hypotheses of critical and optimal periods of learning which are central features of most current theories of human development, pedagogy, personality and psycho - therapy. The problem of adolescent reversibility is enormous and leads increasingly to "doing something" whereas the approach taken here is "doing something specific". The pessimism associated with working with deprived adolescents needs to be dropped in favor of focused experimentation, and the application of scientific method rather than the perpetuation of ideological determinism.

The fact that such an effort is already under way in Israel, by Youth Aliya as well as other organizations, makes a coordinated study all the more necessary, as pointed up in the following paragraph.

3. A third and most important reason for conducting the proposed study is the fact that a great amount of previous work has been done in these areas in Israel, and under the auspices of Youth-Aliya, and also, specifically, under the direction of the principal investigator for this proposal. Thus, work on the several sub-problems, including those which deal with the youth of a residential versus a non-residential setting, and with different types of enrichment procedure, is in various stages of development. That such demonstrations and programs - and research and development - are under way, in various phases, at various levels of development, underscore the necessity of consolidating these efforts, of coordinating them, of conceptualizing them and above all, of testing them systematically, in order to determine which are the most effective and the most transferable to other settings and to other groups.

4. A direct corollary of the previous point, but which focuses specifically on the problem of enrichment, one of the main foci of the entire proposal, is the need to develop materials. Materials and methods, which are either in embryo stage in certain instances, in anecdotal form in others, or are very frequently within the personal repertoires of experienced teachers and psychologists, need more than ever before to be programmed, to be specified, and to be stated in terms that can make their use wide-spread. Obviously, this calls for a programmed and planned development, leading to dissemination.

5. Finally, conducting a study now, in the settings specified in this proposal, takes advantage of the fact that the settings are available, the population and sample accessible,

as are the essential personnel. This means an economy in the use of an already existent structure for research, that may not be recaptured again, with a unique juncture of time, personnel and concern.

IV. RATIONALE FOR THE PROJECT

Justification for requesting support for this comprehensive and long-range project must rest on a variety of sources and experiences. Of necessity, the rationale which follows is highly selective, considering the vast amount of theoretical writing, empirical reports and field experience. Thus, the statement of theoretical foundations is not a review of related literature (a growing bibliography makes such reviews available), but rather, a summary of the assumptions and bases for this project. Similarly, the related research and experimentation, especially the experience of Youth-Aliya and of the principal investigator, are all partial but sufficient to indicate the context of the proposed project.

In short, while educational and psychological work with the deprived is to be found throughout the world and is based on a great variety of theories and methods, the selective presentation of those theories and experiences which are specifically applicable to this proposal will hopefully not be either narrow or segmented.

A. THEORETICAL RATIONALE

Although several possible theories and approaches may be used to explain human development, to guide educational practice, and to undergird therapeutic or enrichment procedures, this project is based on the following premises and assumptions:

Human Development

Human development, namely the emergence of successively new and higher characteristics in the lifespan of an individual, is contingent on the constitutional, the experiential, and the cultural factors, interacting in unique patterns in each developing individual. The number of developmental stages, the quality and elevation of each stage, the likelihood that any stage will provide a basis for a succeeding stage - all these are the elements of development.

The most important and unique of man's developmental characteristics, namely language, intellect, cognition, have a much greater range of development than the others and depend heavily on the level of culture and on learning opportunity. Cultural deprivation is of particular significance because it places a ceiling on individual cognitive development, and therefore, on total development in any modern society.

Cognitive Development

By cognitive development is meant the ability of the human organism to move through stages, from sensori-motor and perceptual types of behavior towards increasingly interiorized operational, abstract and conceptual types of behavior. For our culture, these latter are central, rather than peripheral, and they involve a wider field of activity, both

spatial and temporal. Although the full development of perceptual functions does not necessarily evolve into abstract, representational or conceptual modes of thinking, accuracy, precision, differentiation and stability in perception are prerequisites for the development of abstract behavior.

Similarly, the level of development which is characterized by an episodic or fragmented or isolated mode of experiencing the world and events does not lead to summating, because of the absence of the mediated type of learning (see below for specific meaning of this term) needed for such summative behavior. The characteristics of abstract modes of thinking include the achievement of control of large areas of space and time through interiorization and representational mental activity. Thus, interaction with fields otherwise unreachable through peripheral systems such as sensori-motor is now possible. The inner representation of non-existent objects and relationships is the basis of what we call abstract thinking. Furthermore, an even higher stage of mental functioning is the ability to organize the outer world by imposing relationships and structures according to the specific needs of the organism at a given moment. Thus, a higher degree of equilibrium and a more economical way to deal with the world is now possible.

Mediated Type of Learning

The great range of cognitive development is made possible by a mediated type of learning* provided to the human organism by an experienced adult who frames, selects, focuses and feeds back the actual experience in such a way as to create appropriate learning sets. This is accomplished through the stressing or focusing of certain sets which of necessary restrict the field and enable intentional learning processes. It includes orientation, labeling, framing, re-evocation, comparison, and selection - all of these are prerequisites to independent and autonomous use of environmental stimuli and thus enable direct or non-mediated learning. A further characteristic is the type of attitude towards environment, which leads to summating the objects and events in one's experience, this being the outcome of comparing, of inner representation, and operational behavior.

Without the development of these antecedent levels of behavior, the likelihood of symbolic behavior and the extensive use of symbols for further learning is seriously diminished.

Deprivation

Seen in the general theoretical context stated above, it is now possible to indicate that individuals who are otherwise organically capable but do not undergo experiences which develop them, are by definition deprived. But not all deprivation is cultural deprivation. Thus, when the normal mode of transmitting the culture of a group minimizes mediated types of learning, there will of necessity be a highly probable incapacity for such

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*The definition used here is specific, and is not necessarily the same used in a number of theoretical formulations of human learning.

individuals to adapt to the demands of the new culture, such as the Israeli culture for certain immigrants. By the same token, if an individual within our culture does not experience mediated learning in his early years, his learning set will be inadequate and he will not be able to master school tasks. The experience of mediated learning in one's original culture may be vitiated by a traumatic or difficult contact with a new, different, dominant and demanding culture, quite as other factors may induce resistance or hope - lessness in a member of a culture who is neither culturally different nor deprived and who may have had mediated learning.

The critical factors in deprivation, then, are lack of mediated learning, absence of appropriate learning sets, confrontation of a new, dominant culture which requires these and the adherence to former sets which then inhibit the new experience and make school learning unlikely. Failure to establish appropriate habit formations typically leads to minimal learning in the root culture and to functional or actual illiteracy in the new dominant culture. Contact with the environment, both school and non-school, does not lead to significant modification inasmuch as the appropriate attitudes, motives, sets and skills, remain undeveloped. Under such circumstances, the gap between what is and what is needed remains and attempts to close it are typically unsuccessful.

Cognitive Deficit and Compensatory Education

Stated somewhat differently, then, the problems of cognitive development and deprivation involve not so much the supply of facts, knowledge, vocabulary, language, as learning sets which will insure that learning will not be rote or imitative and will go beyond labeling, to comparison, focusing and inner representation. Nevertheless, it is safe to generalize about most programs of enrichment as dealing with cognitive deficit in terms of a gap to be compensated by adding a certain amount of contentual experience. Thus while attitudinal and motivational factors are considered, the essential strategy of compensatory education or enrichment is contentual addition.

Enrichment

As frequently conceived, then, enrichment is intended to supply what has been missing, that is, a lack of experience and environmental stimulation, especially in per - ceptual, verbal, language, concept-building areas.

Our position is that enrichment is not an additive, but a selective procedure which affects key processes that enable the individual to now reconstruct his environment, rather than just to experience more of it.

Low-functioning Deprived Adolescents

The foregoing discussion of cognitive development, cognitive deficit, and compensatory strategies, must now be related to the problems of the subject population of this proposal, namely adolescents who are significantly or deeply deprived. Most of the literature and research in deprivation has been concerned with young children and, in fact, has either been derived from or led to certain theoretical formulations, especially to postulations of critical periods and of optimal periods. These range across the pre-school

years, but hold little hope that after the age of 12, the poor, slow, inadequate, deprived learner can experience much progress or significant reversal.

The assumption of the present research is that cognitive redevelopment is possible in adolescents if an appropriate strategy is employed. Such a strategy involves the provision of a learning environment in which mediated learning will be fostered, in which the long experience of failure will be replaced by encouragement, and in which the need to approximate adult standards of behavior will be minimal and, therefore, enable concentration on primary learning processes.

Theory of Residential Environment

Although an appropriate environment may not be the determinant of change, one hypothesis of this study, namely that a residential setting is conducive to reversing the effects of deprivation, is rooted in the theoretical notion that the daily life of the low-functioning adolescent needs to be reconstructed to allow a re-tracing of crucial life stages. (See Definition of "Residential Setting" above)

The adolescent leaves the site where deprivation occurred and in which the per - petuation of both deprivation and its effects is likely to continue. The daily confrontation with failure pressures the adolescent to seek out life situations which will replace and compensate for the failure and which will provide social status and inner satisfaction, but which inevitably are quasi-adult in nature and consequently result in behavior which is often pre-delinquent and anti-social. Furthermore, the rewards from such behavior minimize the likelihood that the adolescent will benefit any longer from the school or school-like tasks and atmosphere. The need to leave this field and this life-style is deemed to be of utmost importance in effecting the kind of fundamental change herein envisioned.

The entire motivational and attitudinal approach of the adolescents may well be the keystone for dealing with cognitive and learning redevelopment. With the reduction of anxiety, associated with the repetitious experience of failure, with the new atmosphere of emotional and social belongingness, with the knowledge that social norms are no longer hopeless of attainment and given the program of Youth-Aliya, based upon community work, organized group life and school - all these aspects of a residential environment are uniquely essential in the redevelopment of deprived adolescents.

Theory of Induced Regression

The residential setting makes possible the induction of "regression", (See definition above) which is fundamental in enabling the deprived adolescent to accommodate to the great number of elementary tasks that now confront him. The discrepancy between these fundamental needs to redevelop motoric, perceptual, attentional, exploratory, inhibitory skills and attitudes, on the one hand, and on the other hand the current repertoire of behaviors, which more closely resemble adult performance - this discrepancy makes the elementary learnings most difficult. Because of the danger that his already-defined ego will be blurred and because of the need for defending the integrity and status of this ego, the deprived low-functioning adolescent will reject the threat that comes from primary, child-like tasks unless a shoring up and containment of the ego is effected.

When the adolescent is involved as a conscious and active participant together with an entire group of similar peers, in a controlled, oriented and adult-approved "regression" which filters out all but the most necessary of adolescent-level tasks, then the climate allows the adolescent to enter gradually into the tasks and learnings which would otherwise induce threat and generate non-adaptive ego-defending behavior.

Considering the other aspects of phase-specific instability, such as physiological, social and other dynamic changes, the threat of all these long-buried and now insistent tasks mades the emergence from a poorly-prepared latency period even more difficult for the seriously deprived. A most significant consideration is, then, the fact that the deprived adolescent, unlike other adolescents, has not been able to develop sufficiently during the pre-schodyears, nor during the elementary school or latency period, to emerge with the habits, patterns and controls which enable him to cope with adolescent pressure and has not developed the capacity to sublimate or to delay gratification. This makes the demands of early adolescence even more incompatible with learning situations- a type of incompatability not experienced by any other group of learners. This may best be seen in the specific case of learning to read and write at such an advanced age. Unless a secure environment exists, the growing adolescent will find a highly dependent relationship with teachers unberable.

A significant aspect of this theoretical formulation, then, relates to the regression-inducing agent, namely the adult figure. The adolescents must not only be secure in the new physical setting, in the peer-group, but with the adult figures, in order to accept the "new-old" tasks confronting them. The adult openly, continually, and specifically structures and centers the social and learning milieu.

Instrumental Enrichment

While instrumental enrichment has been defined earlier, and while many allusion. to the concept have been made throughout the section on theoretical rationale, it is in order to summarize now the assumptions underlying this method. In short, instrumental enrichment, as conceived here, is especially applicable to adolescents inasmuch as it involves a conscious awareness of the task, its functions, and its significance, that is neither customary nor necessary for the same task to be learned by young children or in regular curricular learning. The reason for this special approach is that the deprived adolescent, as previously indicated, cannot any longer profit from normal encounters with either the school or non-school learning situation. Thus the justification for isolated, focused, repeated and reinforcing exercises which perform a generative or instrumental function for these youngsters. Through this approach, learning sets are consciously established, flexibility and openness are trained, and the learner now possesses the formal structural operational equipment to deal with a broad range of hitherto inaccessible curricular and life situations.

Assessment of Learning Potential

Together with this review of the theoretical assumptions about the nature of deprivation, its effects and the strategy of reversal, it is of great importante to indicate

the approach to identifying and diagnosing the differential functioning of the subject population and, above all, the instruments for determining who may profit from instrumental enrichment and other redevelopment techniques. The learning potential device is a way of evaluating intelligence, not through manifest behavior (phenotype), but by measuring modifiability. This is done with a focused and controlled learning experience (frequently through the very testing device used to measure and diagnose functioning) and determining change and learning at this very point. Thus, learning po - tential (genotype), may be more adequately approximated and the nature and extent of the impairment may be evaluated.

SUMMARY: A THEORETICAL FRAMEWORK FOR A COORDINATED PROJECT TO REDEVELOP LOW-FUNCTIONING DEPRIVED ADOLESCENTS

The foregoing series of premises and assumptions about the nature of development, culture, deprivation and reversal form the framework for the program of intervention and research described in Section V (Design for the Study). Clearly, it is assumed that cognitive redevelopment is probable in significantly, and even deeply deprived early adolescents. However, the method for achieving this objective, the extent of the modi- fication, and the most suitable settings, are all matters which require careful experimen- tation as well as controlled observations. Although it will be hypothesized that a residen- tial setting is the optimal setting and that instrumental enrichment is the most effective method for achieving cognitive redevelopment in the residential setting, it is fully recognized that other forms of enrichment, such as curricular, must be carefully planned and used as a control,and that a non-residential setting must be given optimal opportunity to use instrumental enrichment. Through the entire proposal that follows, the theory of redevelopment serves as a pervasive set of guidelines.

B. THE YOUTH-ALIYA EXPERIENCE

Inasmuch as the proposed project will be carried out within the framework of Youth-Aliya, the experience of this organization in this field is of special significance here. Youth-Aliya, meaning Youth Immigration, is a non-governmental organization with a long history (since 1933) of youth work. Beginning with the refugees from and then the sur - vivors of the Hitler period, and later dealing with the immigrants from Yemen, the rest of the Middle East and North Africa, Youth-Aliya has a long tradition in working with culturally different, culturally deprived and, of course, severely traumatized children. The very fact that Youth-Aliya had to face such a variety of problems, cultures, traditions and had to be involved in the process of acculturation of so many children (over 110,000) coming from different cultures, has had a very strong impact on its pedagogical, therapeu- tic and even managerial orientation. Thus, Youth-Aliya as an organization is very flexible in its operations and is always ready to adapt itself to the ever changing conditions pre - sented by the Youth-Aliya population.

Throughout its history, its original conception has pervaded its work with successive waves of children. This conception was rooted in a pioneering orientation, one which placed great stress on the dignity as well as therapeutic value of work, community building, social integration and of the individual as an active participant through the small group in the life and building of the nation. Althtough for a time this conception was expressed primarily through agricultural work and development, the scope for this orientation has now been enlarged to include broader educational and occupational activities. However, the central ideology of work, group life, social usefulness and personal responsibility has remained constant.

Such an orientation has provided a climate which is most compatible with the needs of adolescents to belong to a face-to-face peer group which, although controlled by a larger society, is a meaningful and purposeful day-to-day vehicle for the life of the adolescent. The actual placement of the children (currently from 10 to 12 thousand per year) is done in three major settings. These settings have evolved from the original exclusive placement in kibbutzim to include youth villages and institutions as a second form of residential environment, and day centers which are non-residential.

The great body of experience and techniques which have emerged from Youth-Aliya work has been widely disseminated and applied in youth work and education throughout Israel and, in many cases, abroad. Detailed accounts of Youth-Aliya experience may be found in the bibliography, but it is the repertoire of personnel, orientation, settings, techniques, knowledge of cultures and acculturation problems which forms the context for this proposal. As such, this vast repertoire is constantly being implemented and extended, but more than ever a selective, focused and scientific evaluation is necessary and desired for further application and generalization of Youth-Aliya's unique experience.

The specific work of Youth-Aliya with the culturally deprived (some of which is detailed in the next section dealing with the principal investigator's experience) is presented here as directly relevant to the present proposal. It is generally accepted that Youth-Aliya was uniquely successful in the process of acculturation and the modification of deprived children. Although this experience was well-rooted and was most appropriate to vast numbers of fairly homogeneous youth, the changing conditions of Israel (analogous to, if not directly comparable with several other countries) has induced a climate which requires extensive re-examination and focusing if the work with even fewer deprived youth is to be successful. Perhaps the most essential difference between the historic approach and the current need is the former effectiveness of the entire social and community climate in acculturating the new and the deprived immigrant. However, the social, occupational and educational structure now demands a more specified, organized, scientific technology for human re-development.

It is most fortunate that Youth-Aliya has already pointed the way in this second direction through several experiences which may now be described. First, the attempt to cope with a growing number of illiterate and semi-literate adolescents who did not respond (for one reason or another) to the normal educative programs of Youth Aliya gave rise to the

"third class". This was an effort to group some children in kibbutzim so that special educational help might be provided to enable them to be integrated later into the normal two groups. Unfortunately, the period of a year proved to be too brief to effect any real changes in the "third class" and the optimism about this program was not borne out by events. The richness of kibbutz life for most adolescents was probably too diffuse for these deprived children who could not concentrate and focus in ways which would enhance basic learning.

In the light of this experience, the principal investigator proposed in 1957 that a preparatory period be set aside for these deprived youth in a separate location to enable the full operation of a specially designed program. This plan was implemented in 1960 when the new program of a year of preparatory classes for significantly deprived adolescents was instituted at Ramat-Hadassah, a transit center of Youth-Aliya, not far from Haifa.

The Ramat-Hadassah experience has concentrated on the use of a variety of strategies and procedures, many of them previously described in this proposal. Thus, enrichment, induced regression, creative activities, and environmental treatment have been used with about 670 children in the last five years and may be said to be tested, rather than desirable methods. Together with the 80 children at Kiryat Yearim, the total number on whom these environmental and general enrichment approaches have been demonstrated now numbers 750.

The Ramat-Hadassah experience has resulted in significant changes for most of the children, with 70% of them placed in kibbutzim (a most important criterion for functional level) after 1 year of these preparatory classes. However, the remaining group (about 20% of the total - 10% having dropped out) was not eligible for placement in a kibbutz because the one-year program was evidently not sufficient to reverse the deeper deprivation that characterized them.

Some validation of the Ramat-Hadassah approach may be found in the success with which the alumni adapted to the kibbutzim. Although problems still remain in this area (long-term development cannot yet be appraised) it may also be said that a methodology is now emerging which has great promise, especially if combined with other treatment procedures.

The lessons learned from the 20% who did not succeed have pointed to the need for a longer and different approach where deprivation is deeper. It may be said that the present proposal is fully rooted in the Ramat-Hadassah experience and what it has suggested in the way of full development of enrichment and redevelopment programs.

As with a number of programs and experiments described in this proposal, fuller data are available and will be provided as needed. The Youth-Aliya experience is a rich one (see bibliography) but perhaps a further selection emphasizing the experience

of the principal investigator will illustrate even better the facets of this tradition.

C. EXPERIENCE AND RESEARCH OF THE PRINCIPAL INVESTIGATOR

The rationale for the projected study can be found in the above sections on theory and on Youth-Aliya's experience but clearly requires a fuller statement about the initiator of this proposal and his background for directing such a study.

Since 1951 the principal investigator has been involved in research and clinical activity relating to the acculturational, educational and therapeutic processes of culturally different, socially disadvantaged and emotionally disturbed children and adolescents. This work has occurred in two main phases: from 1951 to 1955 in Morocco and in France, where the principal investigator was the Director of Psychological Services of Youth Aliya in Europe - and, from 1956 to date, in Israel, as Director of the Child Guidance Clinic of Youth-Aliya (Jerusalem) as well as Co-Director of the Research Unit of Youth-Aliya.

The experience in Morocco and in France with North African Jewish children came on the heels of the first waves of immigration of these children to Israel (1949, 1950). The difficulty experienced at the time resulted in a climate where the failure of these children to adapt and to profit from schooling led many educators, among others, to conclude that the children were unable to learn, that perhaps they were now mentally deficient, and to other theories born out of desperation. The low level of functioning displayed, the degree of impulsivity and aggression, the very life of these severely deprived children raised fundamental questions about modifiability. It was in this context that the previously mentioned research was conducted with the purpose of clarifying the theoretical and practical problems.

The great difficulty in assessing the levels of potential of these children through the usual methods resulted in the adaptation and also creation of new instruments which changed the nature of the entire philosophy of assessment, the psychological approach to the child, and the procedure itself.

During this time the close collaboration of the late Professor André Rey, of Geneva University, in particular; and of M. Marc Richelle and Prof. Marguerite Loosli-Usteri and of a number of assistants in the examination and study of over 6,000 children, resulted in a great body of data and techniques and was most important in the later theoretical formulations. There must also be acknowledged the seminal significance of Piaget's work in the evolution of the research herein referred to.

What emerged, in addition to a clinical method still in use, was an inventory of the characteristics of the North African children, of their mental functions, an under - standing of the experiential and cultural determinants of these functions, and a body of data and experience which are the bases for educational, acculturational and therapeutic intervention. The bibliography provides references to the details of these studies.

However, not only were a host of new instruments developed but the basis for formulating one essential aspect of the theoretical position presented in this proposal. This is, namely, that learning potential may best be assessed in the culturally different or socially disadvantaged and even in the deeply disturbed by assuming that deeply buried and latent capacities rather than current functioning are to be measured. Thus, the degree, the quality and the direction of the modification occurring in the individual when he is presented with an intensive and task-focused learning experience (the learning potential device) - these are considered the real level of intellectual potential.

The second body of research and experience relevant to the present proposal is that which was concerned with reversibility and modification and was indeed an extension and enlargement of the theoretical and practical aspects of the previous research, with applications now to other ethnic and social groups, and to a variety of clinical, educational and residential settings. The successful reversal of poor functioning to normal achievement, the many instances of change, all these have been measured and are available as a repertoire of facts over a fifteen-year period but statistical validation has not been the focus of this data-gathering. Rather a conceptual framework has evolved which has had a strong impact on actual practice in Youth Aliya, including the "special class" program, within youth villages (over 10 years with many hundreds of children), the Ramat-Hadassah program and now Kiryat Yearim. The dissemination of this theoretical framework and practical methodology has been through publications, numerous workshop activities and through extensive consulting work, and through training the staff of the Child Guidance Clinic to supervise such work.

Further research has included the following studies which have focused on the structure and dynamics of mental functions in respect to both cross-cultural analyses and psychopathology :

(1) Diagnostic signficance of children's drawing - cross-cultural (see bibliography)
(2) Cross-cultural study of children's Rorshachs: North African, Yemenite and other children. (in process of publication)
(3) Conservation of the concept of horizontality: Cross-cultural, by social levels within each culture. This is one of a series of studies in cognitive development with special emphasis on learning style, currently in progress at the Research Unit.

The foregoing selective summary and the attached bibliography are presented to indicate the kind of experience and background which have motivated the principal investigator to present this proposal for a coordinated study of broad scope and involving a systematic and scientific effort to capitalize on the experience to date.

V. DESIGN FOR THE STUDY

It is recognized that the time interval between the submittal of this proposal and the suggested date of project commencement - less than three months - is very brief.

However, it is felt that the availability of facilities, the experience of the proposed Project Director, the existence of prototype materials, the ongoing activity with the children, and availability of certain personnel - all these make it possible to begin the planning and preparation phase as early as Feb. 1st, 1966. Further delay would make it difficult to commence the experimental phase in September 1966; and it is felt that this latter date is a most desireable target for demonstrating and validating the approaches herein described.

A. THE OVERALL DESIGN

The overall design calls for the establishment of two basic variations in the procedures, the first involving the residential aspects, and the second, the instrumental enrichment program. The residential versus non-residential groups, A versus B, will consist respectively, of 150 residential children, in turn divided into four groups and about 120 day-center children, also divided into four groups. The residential children (A) will consist of 60 deeply-deprived children divided into two groups, A1 and A2, those receiving instrumental enrichment and those not; 90 significantly-deprived children, A3 comprising 30 children receiving instrumental enrichment, A4 consisting of 60 (the total remaining population of Kiryat Yearim) not receiving instrumental enrichment.

The non-residential, day-center children (B) will consist of groups B1 and B2, deeply-deprived, 30 each, instrumental versus non-instrumental enrichment; and B3 and B4, significantly-deprived, 30 each, instrumental versus non-instrumental enrichment.

Each group will consist of both boys and girls, with overlapping age spans by sex but matched ages by group.

After suitable selection described in Section V-D below, the subjects of the eight groups will be maintained for two years. Then, the various paths they will follow will be traced carefully during the two years of follow-up, in order to evaluate the impact of the respective experimental procedures. Those subjects who leave their group after 3 months will be followed during the entire life-time of the project (up to 4 years).

Plan of Operation

The following phases comprise the over-all plan of operation during the five-year span of the project.

PHASE I - Planning and Preparation - 6 months - Feb. - Sept. 1966.

During this phase five major activities are envisioned :

1. Completion of the theoretical and conceptual framework of the study.
2. Completion of preparation of materials and methodology (including further pilot studies) of instrumental enrichment.

3. Organization and scheduling of the detailed program.

4. Recruitment, orientation and training of the personnel and staff, research as well as educational and residential, full-time, part-time and consultants.

5. Selection of the several groups of children, residential and day-center.

PHASE II - Project years I and II - Sept. 1966-July 1968

These will include two school years during which the actual instrumental enrichment and the related reversibility and modification activities, will be administered to the sample. During Phase II, several concurrent evaluations, at each six-months interval, are planned. Furthermore, no later than each February, 1967 and 1968, the recruitment of staff and subjects for the remaining phases of the experiment, follow-up or evaluation, will be effected.

PHASE III - Follow-up study - July 1968-June 1970 - 2 years

This phase will consist of two major aspects: follow-up and evaluation.

A. During this time, the focus will be on observing the children in their several new settings, in terms of their levels of functioning, scholastic growth and achievement, social adaptation, work performance - to describe and periodically to measure such functioning throughout these two years.

B. However, evaluative activities will have begun and will proceed throughout this phase to determine the impact on the participants of the several years of experimentation.

PHASE IV - Summation and report period - July 1970 - Jan. 1971 (6 months)

Although reporting activities will commence with the beginning of the entire project and concurrent evaluation and periodic progress reports will also be integral aspects of the project, the cumulative data will be evaluated, synthesized, summarized and prepared for several kinds of dissemination during this final phase.

B. RESEARCH HYPOTHESES

The Major hypotheses of the study are :

I. The use of a residential setting will yield significantly greater improvements in the functioning of deprived and low-functioning adolescents as compared with a non-residential setting.

II. The use of instrumental enrichment in a residential setting will be significantly superior in its effects than residential redevelopment without instrumental enrichment or non-residential treatment, with or without instrumental enrichment.

C. THE RESEARCH SETTING

The three major settings for intervention and research activity will be the Youth

Village at Kiryat-Yearim, a Day Center (to be determined) and the Youth - Aliya Research Unit.

1. Kiryat - Yearim - a youth village, formerly a residence for emotionally disturbed children, but now being tranformed to an educational residence for those who are deprived in social, cultural and educational terms. This village will have changed both its essential population as well as having increased its numbers from 70 to 150 children by September 1966. The residence is oriented to social and group life, leaning heavily on the tradition of Youth-Aliya (see bibliography as well as Section IV-C above). The children are organized by age groups from 12 to 16, mixed as to sex; each group having its own youth leader or counselor (Madrich) and its own house-mother (Metapelet). This essential team is concerned with all non-curricular or formal educational aspects of the childrens' lives. A teaching staff of eight, other personnel for running the village, such as kitchen and dining, gardening, sewing, ceramics, creative arts, drama, sports and gymnastics teachers; and various consultants, psychiatric, psychological, social and psychiatric case workers, complete the personnel.

It should be noted that the youth leader and the house-mother are under the supervision of either a consulting psychologist or a psychiatric social worker and that a consulting psychiatrist meets with the staff twice a month.

The climate and approach of this residence for deprived adolescents is one of planned and induced regression inasmuch as the typical activity is not adolescent; in fact, it is deliberately child-like, elementary, and perhaps even of a kindergarten level. Typically, this may consist of group recitation of elementary poems, or simple drawing and ornamentation; and all of these depend heavily on explicit encouragement and approval by the staff.

2. Day-Center - organized by Youth-Aliya with the Ministry of Labor, the emphasis being on closing the social and educational gap in a non-residential setting near the childrens' homes. Because of the fact that these children or their parents preferred that they stay at home for a variety of reasons, the special day-centers were deemed more appropriate. The day-centers are considered to be very well integrated into the community and as such offer a more comprehensive setting for redevelopment than the normal school.

3. Although the actual field operations of the experiment will be conducted in the two settings described above, it is important now to indicate the nature of the facility from which planning, materials preparation, central project staff and coordination will all emanate.

The co-Directors of the Research Unit are Dr. David Krasilovsky, deputy director and child psychiatrist of Talbieh Psychiatric Hospital, which is an affiliate of Hadassah-Hebrew University-Medical Centre, and Reuven Feuerstein, proposed principal investigator. It has been established and maintained by Youth-Aliya with

Hadassah - WIZO of Canada. The main research is a follow-up study on the North African children referred to in the above sections. Further research has dealt with new therapeutic techniques with deeply disturbed children who are placed as groups within larger groups of normally functioning children where the controlled contact has been found to be of great therapeutic value. Other studies have been described above (Section IV - C). At present, an expanded facility is being planned and this should be the nucleus for housing the proposed project.

D. PERSONNEL AND STAFF

Project personnel will consist of two basic kinds: the personnel engaged in the normal residential and educational activities of the youth village and the day-center, and the special staff required for the instrumental enrichment and the research.

In the case of the regular personnel, special orientation, training and continued supervision will be provided throughout the life of the project. This will include work-shops, meetings, conferences and a body of materials to be made available. It is hoped that such staff work will have the additional value of developing materials and methods useful elsewhere in the preparation of educational personnel working with the culturally deprived.

Project Staff

The following personnel will be needed to direct, administer and execute the various aspects of the project, above and beyond the normal personnel mentioned above :

1. Project Director and Principal Investigator - Reuven Feuerstein
   Full-time from Feb. to August 1966
   Half-time from Sept. 1966 to June 1970
   Full-time from July 1970 to Jan. 1971
   Will assume full-time responsibilities as necessary.

2. Assistant Project Director - to be selected.
   Senior Psychologist, with clinical and research experience, but with special interest and background in deprived children or adolescents as well as in educational problems.
   Half-time from Feb. to August 1966
   Full-time during remainder of project

3. Psychiatric Consultant - Dr. David Krasilovsky, Co-Director of Reserve Unit.
   Because of the amount of psychopathology imbricated in deprivation, as well as the effects of change and the problems that are generated by induced regression, specialized psychiatric consulting is greatly needed, primarily for supervision and staff training.

4. Administrator - Full-time throughout.
   Will be responsible for administration, coordinating schedules, organizing work

of all personnel, supervising non-professional personnel, coordinating printing, art-work, materials, supplies, reports, etc.

5. Rapporteur - Half-time throughout (perhaps to be combined with other functions).
This position calls for someone with writing experience to prepare records of the process and events of the entire project, to coordinate data collection, to maintain cumulative records, to be especially responsible for anecdotal and other protocol material, to supervise report-writing activities.

6. Educational Psychologist - preferably with developmental psychology training. Part-time or consultant.

7. Social Psychologist or Sociologist - Consultants.
To deal with research problems of socioeconomic status, ethnicity, etc. To evaluate group characteristics and control groups.

8. Curriculum Specialist - Half-time throughout.
To help in preparation of materials as well as in in-service training.

9. Psychologists for Examination, Enrichment work and Data Analysis.
Four, full-time during the preparatory and experimental periods ($2\frac{1}{2}$ years) and half-time during remainder of project.

10. Director, Instrumental Enrichment - Full-time throughout.
An experienced teacher with clinical background and able to supervise instrumental enrichment teachers as well as to disseminate the methods as they develop.

11. Statistical consultant
For coding, organization of data, statistical reporting, preparation for statistical treatment, and analysis of results.

12. Clerical Staff and additional personnel are provided in the budget which is attached.

E. THE SUBJECTS

Although the nature and size of the groups have already been indicated, a further word about their selection is now in order. During the year prior to actual admission to Kiryat Yearim the psychological examinations are administered to about 400 children. From this group, 150 characterized as follows will be selected:

Deeply-Deprived: to show extremely low school functions - illiteracy, some knowledge of letters but no ability to integrate or read because of limited or no knowledge of vowels (this makes for illiteracy in Hebrew). In arithmetic, no more than low level of addition and subtraction. Also poor functioning on psychometric tests when used for regular assessment. e.g. visual-motor, graphic, performance tests: a retardation of 3 to 4 years in visual-motor tasks such as the Bender-Gestalt, Figure Complex of Rey, Draw-a-Person, etc. Also poor performance on concept-formation and other abstract thinking tests, such as Raven Matrices.

In addition to the foregoing, there is a low socio-economic and cultural level of the family, including parents, who are poorly educated, non-integrated immigrant status, little reading of newspapers, etc.

To be selected such children must also show modifiability as demonstrated by the learning potential device. There must be an absence of severe personality disorder and there has to have been a school experience of at least 3 years. It should be repeated here that the age of the children will be at least 12 for girls and 13 for boys.

Significantly Deprived: While coming from similar backgrounds with similar symptoms, a different level of lexic function defines this second group. Thus, functional rather than complete illiteracy, consisting of ability to read words and sentences but at no more than 2nd or 3rd grade level. While arithmetic will encompass multiplication as well as addition and subtraction, the level of mastery will still be low. For the selection of children at the day-center, comparable criteria will be used except that this procedure will be administered as the research project is implemented.

F. THE INSTRUMENTS FOR ASSESSMENT AND FOR INSTRUMENTAL ENRICHMENT

While a number of references have been made to the tests, tasks, instruments and devices that have been developed and tested over the years, it must be stated at this point that during the planning phase a careful process of further evaluation and pilot-testing will be necessary as much as the development of entirely new materials and devices. Inasmuch as the instruments have been mentioned, and some of them are standardized, others custom-built, it may be advisable in this section to indicate the types of material and their functions rather than the specific names of these devices.

1. Assessment and Learning Potential Devices:

These will finaly be selected out of a pool of suitable instruments which have been used since the North African study (15years). They are mainly focused upon measuring the degree of modification occurring in the child through coaching, orienting, attitude change and by determining how well a newly-learned principle can be applied.

2. Instrumental Enrichment.

Inasmuch as a fundamental aspect of this research involves the development of an extensive body of instrumental enrichment devices and materials, some indication of the types and functions of such materials is provided. Again, the prototypes exist but the pilot-testing and standardization is the focus of the preparatory phase as well as an important aspect of the experimental work itself.

A sample of functions to be dealt with follows -

I. The induction of "comparative" behavior patterns in areas such as:
   A. Sensori-motor
      a) visual

b) auditory
c) haptic
d) olfactory

B. Representational
a) comparison of events
b) comparison of emotions

II. The development of active and systematic exploratory patterns
A. Concrete materials and objects
a) three-dimensional
b) pictorial
c) verbal-auditory and lexic material
d) problem-solving instruments where trial and error is controlled and systematized

B. Interiorized Exploration
a) anticipatory, planned behavior
b) representation of movement

III. The projection of perceptual "virtual" relationship
A. Closure techniques
B. Segregation
C. Visual transport

IV. Development of perceptual constancies throughout varying conditions of exposure, such as conservation of form, direction and quantity

V. Evaluation of quantities (measurement)

VI. Spatial-perceptual orientation: concepts of right-left, up-down, in-out. These must be detached and decentrated from one's own body.

VII. Temporal orientation

VIII. Accuracy and precision

IX. Summative behavior

X. The induction of need for logical evidence

XI. Language enrichment

Examples of the foregoing may be found in the volumes by Feuerstein and others. However, a large amount of new material is available, especially in French and Swiss sources. Finally, in Israel at the Research Unit of Youth-Aliya, materials already exist and have been tested and used for some time.

G. EXPERIMENTAL PROCEDURE

With the selection of children for each type of experience, the assignment to experimental and control groups will be done by the principal investigator and staff. without the knowledge of teachers or school personnel as to determinants of group assignment. Thus matching will be maximized.. The instrumental enrichment groups will receive a total of about 5 hours a week during the two school years. The schedule

of instrumental enrichment may vary from time to time, but the number of hours will be held constant. The time for such activity will be taken from each class in a rotating fashion so that the total number of regular class hours in any experimental group will not be significantly diminished.

The activities typical of the residential setting have been described. The regular enrichment program will, of course, be applied to all the children. Therefore the entire period of two years will involve experimental differences and similarities as specified in this section. The full schedule and plan of operation will be worked out during the planning period, but the blue-print appears to be appropriate for the kind of experimental design presented.

VI. THE COLLECTION AND TREATMENT OF DATA

There will be a great variety of data provided and it may be ordered in the following categories:

A. Descriptive and Qualitative Data

The case material about each child will be cumulated; and clinical, observational, anecdotal data will be classified. Family histories will be included. Such data will be obtained for the entire 4 years of experiment and follow-up.

B. Statistical Data

In addition to demographic variables, personal data, test scores, school grades, etc., performance on learning potential devices will be quantified. Thus a host of predictor and status variables will be available to evaluate certain relationships in the follow-up phase. Teacher's evaluations, kibbutz work evaluations, changes in reading level, other criteria for school and life success will be quantified where possible so that objective criteria may be used in the final project evaluation. A statistical code will be prepared in advance wherever possible.

C. Process Analysis

From the outset the account of how materials were developed, of staff training, of teacher attitudes, of the climate and history of the residential and day-center settings will be noted by the project historian or rapporteur. This kind of qualitative data needs to be gathered not only for periodic self-examination but as a way of evaluating ultimate findings. Thus while contingency factors cannot be controlled in an experiment, their effect may be appraised. In any event, techniques of in-service training and of attitude change may be as important for dissemination as any other outcomes of such a project. One type of data will be tape recordings which may be used for further teaching as well as for objective analysis.

D. Treatment of Data

In addition to classification and synthesis of the qualitative and process data,

the statistical data will be analyzed so as to enable a series of reports and to maximize dissemination.

1) The before-and-after, experimental-and-control data will be analyzed through use of standard statistical procedures, including tests of significance, group differences, analysis of variance and correlational analysis.

2) Item analysis may be indicated, in the case of certain instruments during the developmental as well as final validational studies of instruments.

3) Intermediate as well as ultimate criteria will be used especially when progress needs to be measured before final follow-up data are available.

Of necessity, a complete design for data analysis is not being presented for it is clear that the absence of final instruments means that certain parameters cannot be presented. Furthermore, one basic problem may be the matter of contamination and bias so that a word is in order on this point. It is planned, for example,that the analysis and ordering of data will be done with the use of code numbers rather than names so that staff engaged in testing or teaching may not evaluate and rate achievement with knowledge of which group an individual is in.

VII. EXPECTED OUTCOMES AND DISSEMINATION OF FINDINGS

While the testing of experimental hypotheses is important it must be clear that the very nature of the problem posed, the need and the experience dictate certain outcomes. Thus, the development of new materials for enrichment including instrumental enrichment will serve a useful purpose at a time when the dearth of materials for working with the deprived adolescent is truly serious. Secondly, the effort to understand the dynamics of adolescent redevelopment should yield important findings even if the hypotheses are not supported. Thirdly, the philosophy of human development so uppermost in current political as well as professional discussions should be considerably enlightened as a result of the proposed project.

Concept clarification may well come early in the project, instrument development by the half-way mark, enrichment techniques may not really be clear until the end and evaluation of special versus more normal school settings may have to await full validation. In any event, the systematic nature of the study should provide useful models as well as data. Finally, the evaluative aspects of the study should be stressed. There must be objective readiness to determine what does and what does not work and to insure that frank reporting will reveal all facets of the evaluative study.

There are envisioned a series of reports, first on instruments, then two annual reports on concurrent evaluation (the latter confidential until the experimental phase is completed); two follow-up reports and a final comprehensive synthesis at the very end of the project. In addition to the periodic reports, publications on various problems and

topics, conceptual, instrumental, pedagogic, environmental, will be prepared.

It should also be noted that the two international conferences as well as local conferences and workshops are designed to maximize dissemination.

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